Editorial ▸ Good Eyes — Better Times

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Most people think of eyeglasses as a means to improve sight, but lenses can be used for much more. During the last fifty years, optometrists have developed lens rehabilitation programs to help patients with such diverse conditions as mental disabilities, traumatic brain injuries, and visually related learning problems. The concepts developed to treat these conditions are also being used to facilitate an increase in the performance of athletes in many sports activities.

Optometrists interested in human behavior have been employing different kinds of lenses to alter visual perception since the fifties. Since vision is a feedback, feed-forward process whereby changing the input changes the output, human behavior can be modified by altering visual perception.

In 1985, I wondered about the possibility of improving the performance of runners. More precisely, I wondered whether altering the perception of space would help runners reach their potential. At the outset, I had two concerns; the first pertained to human physiology. I contacted Dr. George Sheehan, a cardiologist and long-distance runner famous for his articles about running. Coincidentally, he lived in the next town. Dr. Sheehan wrote extensively about his experiences running, and I admired his philosophy and pragmatic prose. Dr. Sheehan assured me that regardless of what I was doing, I could not push runners beyond their physiologic limit. The circulatory and pulmonary systems would remain sound.

My second concern was the runners' binocularity. Humans have two eyes that develop many skills in coordination with each other. Two eyes should focus equally well, fixate the same distance at the same time, and turn together in all directions. Some people have good binocularity, and some people have poor binocularity. For the purpose of this study, I decided to change the perception of space for runners who have good binocular skills.

In February of 1985, a seventeen-year-old high school senior visited my office. Tony was preparing for his last cross country meet. He did not need lenses to see clearly, and his binocular abilities were solid. I told him I thought I could help him run faster if he would wear a special pair of glasses while training. Incredulous as Tony was, he was willing to wear the prism lenses. I prescribed 5 prism diopters base down for each eye. Tony received his flat prisms on Monday, February 25. He was to train on Tuesday, Wednesday, and Thursday and run in his final meet on Saturday, March 2. I instructed him to wear his glasses only while training and not when running in the meet. I asked Tony to record his times and to call me the following week with the results.

About a week later Tony called. As eager as I was to question Tony, I let him tell me in his own words what happened. Tony normally ran ten miles three times a week. However, with the prisms on, he could only run four miles each day. His three-day average time for the first mile was 6:40.3, the second mile was 6:47, the third mile was 6:49, and the fourth mile was 6:51.2. When Tony ran in the meet without his glasses, his time for the first mile was 6:34, the second mile was 6:38, the third mile was 6:41, and the fourth mile was 6:39. His story was repeated by a dozen different high school cross country runners. Over a four-mile course, the least amount of improvement realized by any runner was nineteen seconds. Each runner reported the development of a kick toward the end of the race. The value of the prisms was the increase in the runners' stamina and, because they ran fewer miles in training, there was reduced strain and possible injury to the runners' feet and legs.

I decided to prescribe the prisms for Eric. He was a college sprinter who did need a myopic prescription. I gave him a spheroprism: a half diopter less than his spherical distance prescription and five diopters base down prism in each eye. He practiced with the lenses for one week prior to his final college meet. Eric said that he felt as if the lower half of his body was unable to keep pace with his upper body. His response was a one-second improvement in a 400-meter race. Although I did not think much of a one-second improvement, Eric was ecstatic.

Tom, the college soccer player, wore his spheroprisms while running laps before and after each practice. During the games, he reported an increase in energy, resulting in less tiredness during each game. He made All Conference that year—his senior year.

It seems apparent that any athlete who runs regularly can benefit by altering their spatial perception. Their increased stamina and reduced strain on their bodies, resulting in fewer injuries, as a consequence of wearing the prisms is a terrific benefit to the dedicated athlete. My experiences have to be repeated with more athletes in all sports that require running. I spoke to a high school track coach and a college track coach in the late 80s, but they were unwilling to venture into the arena of visual perception. Times have changed, and those of you who have made great inroads in sports vision may now have the opportunity to work with football players, basketball players, baseball players, etc. I enjoyed working with athletes, and I believe you will also.